

REMARKS

Claims 1-12, 15-21, and 23-24 are cancelled without prejudice. The cancellation of those claims, and the amendment to the specification, were requested by the aforementioned Preliminary Amendment and are repeated herein. Thus, Claims 13, 14 and 22 remain in this application, with no claim previously allowed.

Since Claims 1-12 and 21 are cancelled, the rejection under 35 U.S.C. 101 is now moot and should be withdrawn.

Claims 13-14 stand rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6370169 to Seya et al. ("*Seya*") in view of U.S. Patent No. 5731874 to Maluf ("*Maluf*"). (Claim 24, which was also rejected by the Examiner for the same reason, is now cancelled.) This rejection is respectfully traversed.

The Examiner contends that *Seya* discloses the limitations of Claim 13 except for the optical diffraction unit, and that the optical diffraction unit is disclosed in *Maluf*, concluding that Claim 13 would have been obvious over a combination of *Seya* and *Maluf*.

However, it should be clearly understood that the claimed optical diffraction unit explicitly requires to diffract the control target light from the variable wavelength light source into a direction corresponding to the optical wavelength of the control target light, and then this diffracted light is entered into the claimed periodic signal generation unit. In other words, as shown in Fig. 7 of the present specification, the claimed diffraction unit is an element to be provided between the variable wavelength light source and the periodic signal generation unit, and this periodic signal generation unit is an element that provides an input to the phase detection unit.

In contrast, *Seya* only discloses a configuration shown in Fig. 1 in which the elements provided between the wavelength variable light source 10 and the phase detector 22 are only a lens

12, a deflector 13, a mirror 20 and an optical detector 21. It should be apparent that none of these elements has a function of producing the periodic signals with a phase varied according to a diffraction direction of the diffracted light, as explicitly required by the claimed periodic signal generation unit as defined in Claim 13. Therefore, *Seya* completely fails to disclose anything corresponding to the claimed periodic signal generation unit.

Moreover, *Seya*'s configuration clearly does not require any diffraction grating, while it is an essential feature of *Seya*'s configuration to utilize the wavelength selective storage medium 15 with a marker hole 16, which does not have an equivalent function as the claimed optical diffraction unit. Thus, omitting this essential feature from *Seya*'s configuration and introducing a diffraction grating of *Maluf* which has no role to play in *Seya*'s original configuration as contemplated by the Examiner, is illogical and contrary to the teaching disclosed by *Seya*.

On the other hand, *Maluf* only discloses the discrete wavelength spectrometer which uses a diffraction grating for the purpose of separating different wavelength components contained in the incident beam, which is a function different from that required by the claimed optical diffraction unit. It should also be apparent that such a diffraction grating has no role to play in the *Seya*'s configuration.

Consequently, there is no reason for one of ordinary skill to combine *Seya*'s configuration and *Maluf*'s diffraction grating, and such a combination completely fails to be functionally equivalent to the apparatus as defined in Claim 13.

In fact, *Seya* and *Maluf* completely fail to disclose any teaching of the structural and functional combination comprising an optical diffraction unit for diffracting the control target light into a direction corresponding to the optical wavelength of the control target light; a periodic signal generation unit for detecting a diffraction light, and generating periodic signals with a phase varied

according to a diffraction direction of the diffraction light, as defined in Claim 13. Thus, it is impossible to derive the invention defined in Claims 13 from any combination of *Seya* and *Maluf*.

Accordingly, the structural and functional combinations recited in Claim 13 would not have been obvious to one of ordinary skill from the cited references, at the time the Applicant made the claimed invention.

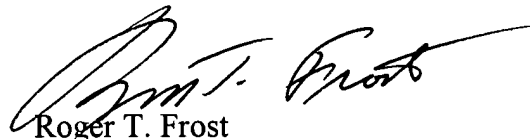
Claim 14 depends from independent Claim 13. The remarks made above in support of the independent Claim 13 are equally applicable to distinguish the dependent claim from the cited references.

Claim 22 stands rejected under 35 U.S.C. 103(a) as unpatentable over *Seya* in view of *Maluf*, and further in view of U.S. Patent No. 5,544,183 to Takeda ("*Takeda*"). (Claims 15-20 and 23, which were also rejected by the Examiner for the same reasons, are now cancelled.) This rejection is further respectfully traversed. Claim 22 is a corresponding method claim of the apparatus Claim 13 and the remarks made above in support of Claim 13 also apply to Claim 22. *Takeda*'s disclosure of the reference signal generation unit and the phase comparator does not overcome the teaching deficiency of *Seya* and *Maluf*, and indeed, *Takeda* was not cited for that purpose. Accordingly, the structural and functional combinations recited in Claim 22 also would not have been obvious to one of ordinary skill from the cited references, at the time the Applicant made the claimed invention.

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The foregoing is submitted as a complete response to the Office Action identified above. The Applicant submits that the application is in condition for allowance and solicit a notice to that effect.

Respectfully submitted,



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